

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Southwest Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

ABB, Inc.
State Route 1011, Bland, Virginia
Permit No. SWRO10814

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, ABB, Inc. has applied for a Title V Operating Permit for its Bland, VA facility. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact:_____ Date:_____

Air Permit Manager:_____ Date:_____

Deputy Regional Director:_____ Date:_____

FACILITY INFORMATION

Permittee

ABB, Inc.
P.O. Box 38
Bland, VA 24315

Facility

ABB, Inc.
State Route 1011
Bland, VA

AFS ID No. 51- 021-00008

SOURCE DESCRIPTION

SIC Code: 3612 – Power Distribution and Specialty Transformer Manufacturing

ABB manufactures dry type transformers (SIC code 3612). Raw material is received to begin the process of assembling the transformer. The assembly begins with rolls of electrical core steel sheared to proper length and placed together to form a transformer core. The core then receives a finished set of coils, which are placed onto the legs of the core. Bus connections and terminations are then installed on the transformer.

The transformer is transported to the impregnation area where it is baked in an oven to remove moisture. After the drying process, the transformer is placed into a sealed tank under vacuum to further remove moisture. Varnish is allowed to flow into the tank, submerging the unit to provide a uniform coating. The transformer is drained, then placed in an oven to cure the varnish.

Sheet metal fabrication produces steel, aluminum, and copper components that are used in various assembly processes. Sheet metal cabinets are fabricated from the materials to house the transformers. The cabinets go through the process of painting (electrostatic dry powder or wet paint) and oven curing. The cabinets then go to the pre-test assembly area where the transformers are placed into the cabinets. The completed assemblies are then electrically tested. After testing, the transformers go to final assembly where remaining ancillary components are added and they are packed for shipping.

Process and auxiliary equipment include several propane-fired and electric curing and dry-off ovens, propane-fired parts washer and dryer, metal and wood cutting, grinding, punching, sawing, brazing, and soldering equipment, propane storage tanks, tin dipping tank, epoxy cast dosing vessel, varnish dip coating system with tanks, electrostatic paint booths, wet paint spray booth, pressure washer, and propane building heaters.

The facility is a Title V major source of VOC and HAP emissions. This source is located in an attainment area for all pollutants. The facility was previously permitted under a Minor NSR Permit issued on August 31, 1999 (as amended on April 18, 2000, March 12, 2002, and July 29, 2003).

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility was issued an Informal Correction Letter on June 17, 2003, alleging noncompliance with the monitoring requirement to conduct Method 22 observations on exhausts from the coating operations. The company submitted a request to change this requirement.

The company is currently operating in compliance with the monitoring requirement pending permit approval.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled
V97-01	V97-01A	Steelman LP Gas Oven	0.35 MMBtu/hr	- -	- -	- -
V97-02	V97-02A	Steelman LP Gas Oven	0.35 MMBtu/hr	- -	- -	- -
V97-04	- -	2 Nordson Electrostatic Paint Booths	200 lb/hr, each	Paint Recycler and Pulse Jet Cartridge Filters	V97-04	Particulate
V97-06	V97-06A	Devilbiss Spray Booth	5.6 gal/hr	Kraft Paper Filters	V97-06	Particulate
V97-07	V97-07A	ASI Four Stage Parts Washer	1.98 MMBtu/hr	- -	- -	- -
V97-08	V97-08A	ASI Curing Oven	2.5 MMBtu/hr	- -	- -	- -
V97-09	V97-09A V97-09B	2 Kaufman Electric Curing Ovens	83 kW each	- -	- -	- -
V97-10	V97-10A	Kaufman Electric Curing Oven	36 kW	- -	- -	- -
V97-11	V97-11A	LP Dry-Off Oven	1.5 MMBtu/hr	- -	- -	- -
V97-12	V97-12A	Kaufman Electric Curing Oven and Varnish Dipping Operation	250 kW and 25 gal/hr	- -	- -	- -
V97-13	V97-13A	Despatch Curing Oven and Dipping Operation	204 kW and 25 gal/hr	- -	- -	- -
V97-15A	- -	Sawing & Grinding Process Operation	4.8 lb/hr	Pneumafil Bag House Model 4.5-40-10 Reverse Air	V97-15A	Particulate
V97-16	- -	Epoxy Cast Dosing Vessel	- -	- -	- -	- -
V97-17	- -	Electric Cast Curing Oven	- -	- -	- -	- -
V97-24	- -	Propane ASI Parts Dryer	0.075 MMBtu/hr	- -	- -	- -
V97-28	V97-28A	Sawing & Grinding Process Operation	400 fpm	Pneumafil Mod. CW UP Pulse Jet Baghouse	V97-28	Particulate

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled
V97-29	- -	Wood Sawing / Crate Bldg.	400 fpm	Dustex Model 500 B Sock Filter	V97-29	Particulate
V97-31	V97-31A	Epoxy Cast. System - Elec. Curing Ovens	0.45 MMBtu/hr	- -	- -	- -
V97-32	- -	Epoxy Casting Sytem – Vac. Casting Equip.	5.1 coils/day	- -	- -	- -
V97-33	- -	Sawing & Grinding Process Operation	- -	Donaldson Torit	V97-33	Particulate
- -	- -	Silo	1910 ft3	Vent Filter	- -	Particulate

EMISSIONS INVENTORY

2002 emissions are summarized in the following tables.

2002 Actual Emissions

Emission Unit	2002 Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO ₂	PM ₁₀	NO _x
Spray Booth	4.68				
Dipping	28.36				
Total	33.04				

2002 Facility Hazardous Air Pollutant Emissions

Pollutant	2002 Hazardous Air Pollutant Emission in Tons/Yr
Ethylbenzene	0.93
Ethylene Glycol	0.93
Methyl Isobutyl Ketone	3.25
Methyl Ethyl Ketone	3.25
Methanol	0.93
Toluene	4.18
Xylene	3.72

PROCESS EQUIPMENT APPLICABLE REQUIREMENTS - (V97-01, V97-02, V97-04, V97-06, V97-07, V97-08, V97-09, V97-10, V97-11, V97-12, V97-13, V97-15A, V97-24, V97-28, V97-31, V97-32, V97-33)

Limitations

The following limitations are State BACT requirements from the minor new source review permit dated August 31, 1999 (as amended April 18, 2000, March 12, 2002, and July 29, 2003):

Condition #3 requires particulate matter from the paint spray booth to be controlled by paper filters or equivalent.

Condition #4 requires particulate matter from the electrostatic spray booths to be controlled by fabric filters or equivalent.

Condition #5 requires particulate emissions from silo loading to be controlled by vent fabric filter or equivalent.

Condition #6 requires particulate emissions from sanding/grinding to be controlled by a fabric filter or equivalent.

Condition #7 limits coating throughput to 11,000 gallons per year.

Condition #8 requires that dipping operations consume no more than 96.0 T/yr of Isonel 51 or equivalent, and no more than 44.1 T/yr of Dow Corning 997 or equivalent.

Condition #9 requires that the company uses compliant coatings defined by coating composition, including density, VOC content, and HAP constituents as follows:

Density	14.3 lb/gal
Volatile organic compounds	7.2 lb/gal
Toluene	45%
Ethyl benzene	10%
Xylene	40%
Ethylene glycol	10%
Methyl isobutyl ketone	35%
Methyl alcohol	10%
Methyl ethyl ketone	35%

Condition #10 limits the approved fuels for the ASI parts washer, ASI curing oven, Steelman curing ovens, and dry-off oven to propane/natural gas.

Condition #11 limits VOC emissions from epoxy casting to 0.55 T/yr for any individual epoxy material, or 1.0 T/yr from total materials.

Condition #12 limits VOC emissions from dipping operations and associated curing ovens to 72.0 T/yr

Condition #13 limits PM/PM10 and VOC emissions from the paint spray booth to:

Particulate Matter/PM-10	5.0 tons/yr
Volatile Organic Compounds	39.6 tons/yr

Condition #14 limits VOC emissions from epoxy casting to 0.55 T/yr.

Condition #15 limits visible emissions from the paint spray booth and epoxy casting exhausts to 5% opacity.

Condition #16 limits visible emissions from the Kaufman, Despatch, and Steelman Industries ovens to 10% opacity.

Condition #17 requires the company to keep monthly and annual records of throughput of materials and pollutant emissions from the paint spray booth, dip operations, and epoxy casting system.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80, New Source Standard for Visible Emissions – The opacity requirement for the silo, the fiberglass sawing/grinding, the wood sawing, and the resin sanding/grinding operations is 20% except for one 6-minute period not to exceed 30%.

9 VAC 5-50-260, Standard for Stationary Sources – Best Available Control Technology – This booth was required to employ BACT.

9 VAC 5-40-2270, Standard for Particulate Matter - Requires the source to collect particulate matter emissions from woodworking equipment, and requires particulate matter emissions to meet a concentration of 0.05 gr/dscf of exhaust gas.

9 VAC 5-40-2290, Standard for Fugitive Dust/Emissions – The source must use reasonable precautions to prevent fugitive dust from woodworking operations, including covering conveying equipment.

Monitoring

The monitoring and recordkeeping requirements in Condition 17 of the NSR permit have been modified to meet Part 70 requirements.

The company will conduct weekly checks to determine the presence of visible emissions from the paint spray booth (V97-06), epoxy casting system (V97-31, V97-32), and curing oven (V97-01, V97-02, V97-09, V97-10, V97-11, V97-12, V97-13) exhausts. If visible emissions are observed, a Method 9 observation is required, and corrective measures are necessary if opacity exceeds the opacity limits.

The company is also required to conduct monthly inspections of the control equipment associated with the sand silo, electrostatic spray operation (V97-04), wood sawing (V97-29), and sawing/grinding equipment (V97-28, V97-33). This will demonstrate compliance with the wood sawing emission limit of 0.05 gr/dscf and the 20% opacity limitation. The wood sawing operation operates sporadically, and is not expected to produce appreciable quantities of particulate matter of regulated size. Therefore, as long as the fabric filter is properly operating, compliance with the 0.05 gr/dscf and 20% opacity limitation should be easily achieved.

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include results of visible emissions observations, MSDS information on all coatings, monthly and annual coating usage, VOC content of materials as determined by EPA Method 24, hours of operation, VOC and PM10 emissions calculations, results of monthly inspections, operating training data, and a maintenance schedule for control equipment.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The company must submit annual compliance certifications and semi-annual monitoring reports as detailed in the General Conditions.

Streamlined Requirements

None required.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §§2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

This general condition cites the sections that follow:
9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield
9 VAC 5-80-150. Action on Permit Applications

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

This general condition cites the sections that follow:

9 VAC 5-40-50. Notification, Records and Reporting
9 VAC 5-50-50. Notification, Records and Reporting

J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources
9 VAC 5-80-190. Changes to Permits.
9 VAC 5-80-260. Enforcement.
9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources
9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications
Located in Prevention of Significant Deterioration Areas
9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications
Locating in Nonattainment Areas

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction
9 VAC 5-80-110. Permit Content

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follow:
40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.
40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.
40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

STATE ONLY APPLICABLE REQUIREMENTS

Not Applicable.

FUTURE APPLICABLE REQUIREMENTS

40 CFR 63, Subpart MMMM, Surface Coating of Miscellaneous Metal Parts and Products has been proposed, but is not final at this date. This regulation is expected to apply to this facility.

INAPPLICABLE REQUIREMENTS

NSPS Subpart TT, *Standards of Performance for Metal Coil Surface Coating*, does not apply to the epoxy casting operation. The subpart applies to the coating of continuous metal strip that is packaged in a roll. Their epoxy casting operation involves coating of individual metal coils, not continuous metal strip, which will be subsequently placed within a transformer housing.

COMPLIANCE PLAN

Not applicable.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
V97-05	GEO Olcott Pressure Washer #GOC-3648G	9 VAC 5-80-720 A	Gas Combustion Products	0.15 MMBtu/hr
V97-18	Tin Dipping Operation	9 VAC 5-80-720 B	PM ₁₀	- -
V97-19	Metal Cutting, Grinding, Punching	9 VAC 5-80-720 B	PM ₁₀	- -
V97-20	Welding, Brazing, Soldering	9 VAC 5-80-720 B	PM ₁₀	- -
V97-21	Solvents, Cleaners, Adhesives	9 VAC 5-80-720 B	VOC	- -
V97-22	Propane Storage Tank	9 VAC 5-80-720 B	VOC	114,138 gal/yr
V97-23	Building Heaters (gas-fired)	9 VAC 5-80-720 A	Gas Combustion Products	< 4 MMBtu/hr

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The company did not identify any confidential information.

PUBLIC PARTICIPATION

The draft permit was placed on public notice in the *Bland County Messenger* from September 17, 2003 to October 17, 2003. No comments were received from EPA, the affected states, or the public. The proposed permit was forwarded to EPA on October 20, 2003 for their review. The 45-day review period expired on December 5, 2003. No comments were received.